

WHAT IS CLAIMED IS:

1. A system for controlling starting and stopping of an engine in a vehicle, wherein the vehicle has a plurality 5 of electric devices including a driving electric device required to keep the vehicle in a traveling state, the system comprising:

a plurality of switching circuits for supplying power and stopping the supply of power to the electric devices, 10 the plurality of switching circuits including a driving switching circuit for supplying power or stopping the supply of power to the driving electric device;

15 a power supply control unit for generating a plurality of activation signals, each switching an associated one of the switching circuits between an inactivated state and an activated state; and

20 an activation holding circuit for holding the state of the driving switching circuit and enabling the driving switching circuit to be switched from an activated state to an inactivated state when the vehicle is in a non-traveling state.

2. The system according to claim 1, wherein the vehicle has a push button switch pushed by a driver to start 25 and stop the engine, and the activation holding circuit enables the driving switching circuit to be switched to the inactivated state if the push button switch is pushed when the vehicle is in the non-traveling state.

30 3. The system according to claim 1, further comprising:

a first activation device arranged between the driving switching circuit and the power supply control unit to

activate the driving switching circuit in accordance with the associated activation signal; and

a second activation device arranged in parallel to the first activation device, wherein when the first activation device is switched ON, the activation holding circuit keeps the second activation device ON to hold the driving switching circuit in the activated state and switches the second activation device OFF to enable the driving switching circuit to be switched to the inactivated state.

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4. The system according to claim 1, wherein the vehicle has a push button switch pushed by a driver to start and stop the engine and a shift lever switchable between driving and non-driving positions, and the power supply control unit outputs the activation signal for switching the driving switching circuit to the activated state when the push button switch is pushed and the engine is in a state in which starting of the engine is permitted; and

the activation holding circuit starts holding the driving switching circuit in the activated state and provides the power supply control unit with a holding signal to indicate that the activated state is being held when either the pushing of the push button switch is completed after the driving switching circuit is activated or position 25 of the shift lever is switched from the non-driving position to the driving position:

5. The system according to claim 1, further comprising a plurality of activation devices arranged in parallel between the driving switching circuit and the power supply control unit to activate the driving switching circuit in response to the associated activation signal, wherein the activation holding circuit holds the driving

switching circuit in the activated state by holding each of the activation devices in a state switched ON and releases the activation devices from the ON state to enable the driving switching device to be switched to the inactivated state.

6. The system according to claim 1, wherein the power supply control unit monitors the state of the driving switching circuit and generates the activation signal associated with the driving switching circuit in accordance with the held state of the driving switching circuit when the power supply control unit returns from an abnormal state to a normal state.

7. A system for controlling starting and stopping of an engine mounted on a vehicle, wherein the engine includes an electric engine device for operating the engine when activated, the system comprising:

a relay connected to the electric engine device to supply the electric engine device with power when activated;

a driver circuit for activating and inactivating the relay in response to an activation signal;

a power supply control unit for providing the driver circuit with the activation signal;

a latch circuit connected to the driver circuit for holding the relay in the activated state when the vehicle is traveling and for enabling the relay to be switched from the activated state to an inactivated state for at least when the vehicle is not traveling.

8. The system according to claim 7, wherein the latch circuit keeps the relay activated even if the power supply control unit stops outputting the activation signal

when the vehicle is traveling.

9. The system according to claim 8, wherein the vehicle includes a push button switch pushed by a driver to 5 start and stop the engine, the latch circuit keeping the relay activated even if the push button switch is pushed when the vehicle is traveling.

10. The system according to claim 9, wherein the 10 latch circuit enables the relay to be inactivated if the push button switch is pushed when the vehicle is not traveling.

11. The system according to claim 9, wherein the 15 electric engine device is activated when the vehicle is not traveling, the push button switch is pushed, and the power supply control unit outputs the activation signal.

12. The system according to claim 7, wherein the 20 electric engine device is an engine control unit for controlling the engine.

13. A system for controlling starting and stopping of an engine in a vehicle, wherein the vehicle has a plurality 25 of electric devices including a driving electric device required to keep the vehicle in a traveling state, the system comprising:

a plurality of switching circuits for supplying power and stopping the supply of power to the electric devices, 30 the plurality of switching circuits including a driving switching circuit for supplying power or stopping the supply of power to the driving electric device;

a power supply control unit for generating a plurality

of activation signals, each switching an associated one of the switching circuits between an inactivated state and an activated state; and

5 holding means for holding the state of the driving switching circuit and enabling the driving switching circuit to be switched from an activated state to an inactivated state when the vehicle is in a non-traveling state.

10 14. The system according to claim 13, wherein the vehicle has a push button switch pushed by a driver to start and stop the engine, and the holding means enables the driving switching circuit to be switched to the inactivated state if the push button switch is pushed when the vehicle is in the non-traveling state.

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15. The system according to claim 13, further comprising:

20 a first activation device arranged between the driving switching circuit and the power supply control unit to activate the driving switching circuit in accordance with the associated activation signal; and

25 a second activation device arranged in parallel to the first activation device, wherein when the first activation device is switched ON, the holding means keeps the second activation device ON to hold the driving switching circuit in the activated state and switches the second activation device OFF to enable the driving switching circuit to be switched to the inactivated state.

30 16. The system according to claim 13, wherein the vehicle has a push button switch pushed by a driver to start and stop the engine, and the power supply control unit outputs the activation signal for switching the driving

switching circuit to the activated state when the push button switch is pushed and the engine is in a state in which starting of the engine is permitted; and

the holding means starts holding the driving switching circuit in the activated state and provides the power supply control unit with a holding signal to indicate that the activated state is being held when the pushing of the push button switch is completed after the driving switching circuit is activated.

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17. The system according to claim 13, further comprising a plurality of activation devices arranged in parallel between the driving switching circuit and the power supply control unit to activate the driving switching circuit in response to the associated activation signal, wherein the holding means holds the driving switching circuit in the activated state by holding each of the activation devices in a state switched ON and releases the activation devices from the ON state to enable the driving switching device to be switched to the inactivated state.

18. The system according to claim 13, wherein the power supply control unit monitors the state of the driving switching circuit and generates the activation signal associated with the driving switching circuit in accordance with the held state of the driving switching circuit when the power supply control unit returns from an abnormal state to a normal state.

30 19. The system according to claim 16, wherein the vehicle includes a shift lever switchable between driving and non-driving positions, and the holding means starts holding the driving switching circuit in the activated state

and provides the power supply control unit with a holding signal to indicate that the activated state is being held when either the pushing of the push button switch is completed after the driving switching circuit is activated
5 or the position of the shift lever is switched from the non-driving position to the driving position.

20. The system according to claim 13, wherein the holding means comprises a latch circuit.